

WHAT IS CLAIMED IS:

1. An operation control device for an spark ignition internal combustion engine performing ignition in a fixed ignition crank angle range, comprising:

a unit crank angle sensor which output a unit crank angle signal corresponding to a unit crank angle of the engine; and

a programmable controller programmed to:

calculate an engine rotation speed based on the unit crank angle signal while preventing the calculation of the engine rotation speed based on the unit crank angle signal detected in the ignition crank angle range from being performed, and

control the engine according to the engine rotation speed.

2. The operation control device as defined in Claim 1, wherein the controller is further programmed to execute the calculation of the engine rotation speed at a pre-set fixed time interval.

3. The operation control device as defined in Claim 1, wherein the engine comprises a plurality of cylinders repeating a combustion cycle in a fixed angular interval and the operation control device comprises a reference position sensor which outputs a reference position signal at equal angular intervals, the number of the reference position being equal to the number of cylinders in a crank angle range of 360 degrees, and the controller is further programmed to select the most recent unit crank angle signal outside the ignition crank angle range by determining the ignition crank angle range based on the reference position signal, and to calculate

the engine rotation speed based on a selected unit crank angle signal.

4. The operation control device as defined in Claim 3, the ignition crank angle range is set to a fixed advance angle range from a compression top dead center for each cylinder.

5. The operation control device as defined in Claim 4, wherein the engine is a four-stroke cycle six-cylinder engine, and the controller is further programmed to calculate the engine rotation speed based on an interval of unit crank angle signals detected in a range from the compression top dead center for each cylinder to the input of the next reference position signal.

6. The operation control device as defined in Claim 4, wherein the device further comprises a cylinder discrimination sensor which specifies the compression top dead center for each cylinder in combination with the reference position signal.

7. The operation control device as defined in any one of Claim 1 through Claim 6, wherein the controller is further programmed to determine a target value of an engine control item selected from a fuel injection amount, a fuel injection timing and an ignition timing to an injected fuel, and control the engine to realize the target value

8. The operation control device as defined in Claim 7, wherein the device further comprises a startup sensor which determines whether or not the engine is starting up, and the controller is further programmed to control the engine in synchronism

with the reference position signals when the engine is starting up and to control the engine at fixed time intervals when the engine is not starting up.

9. The operation control device as defined in Claim 8, wherein the engine further comprises a starter motor cranking the engine, the startup sensor comprises a switch which outputs a start signal for commanding current supply to the starter motor, and the controller is further programmed to determine that the engine is starting up when the start signal is ON.

10. The operation control device as defined in any one of Claim 1, wherein the controller is further programmed to measure three intervals of the unit crank angle signals in succession, and to calculate the engine rotation speed based on the maximum value of the three intervals.

11. An operation control device for an spark ignition internal combustion engine performing ignition in a fixed ignition crank angle range, comprising:

means for outputting a unit crank angle signal corresponding to a unit crank angle of the engine;

means for calculating an engine rotation speed based on the unit crank angle signal while preventing the calculation of the engine rotation speed based on the unit crank angle signal detected in the ignition crank angle range from being performed; and

means for controlling the engine according to the engine rotation speed.

12. An operation control method for an spark ignition internal combustion engine

performing ignition in a fixed ignition crank angle range, comprising:

detecting a unit crank angle signal of the engine;

calculating an engine rotation speed based on the unit crank angle signal while preventing the calculation of the engine rotation speed based on the unit crank angle signal detected in the ignition crank angle range from being performed;
and

controlling the engine according to the engine rotation speed.